



Tiffany West Smink  
1801 California Street - 10<sup>th</sup> Floor  
Denver, Colorado 80202  
Telephone: 303-992-2506  
tiffany.smink@centurylink.com

Associate General Counsel/Senior Counsel

March 4, 2016

**Via IBFS**

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, DC 20554

Re: *In the Matter of Higher Ground LLC Application for Blanket Earth  
Station License, File No. SES-LIC-20150616-00357, Call Sign E150095*

Dear Ms. Dortch:

On February 23, 2016 Higher Ground CEO Rob Reis and Higher Ground's counsel Adam Krinsky of Wilkinson, Barker, Knauer and CenturyLink personnel Melissa Newman, Thomas Schwengler, Joy McConnell-Couch, Thomas McGowan, Leslie West and myself attended a meeting in person at CenturyLink's offices in Denver, Colorado and by telephone to discuss the pending application of Higher Ground referenced above.

At the meeting, Mr. Reis took CenturyLink through a presentation very similar to the one Higher Ground provided to FCC staff on December 15, 2015. The meeting was a friendly and productive opportunity for CenturyLink personnel to ask questions and discuss issues about the SatPaq interference protection regime and the anticipated functioning of SatPaq devices. CenturyLink personnel participating in the meeting now have a better understanding of how the SatPaq devices and system are designed and expected to function.

CenturyLink remains concerned that there has not been sufficient testing of the devices and the interference protection system. In turn, Higher Ground has yet to effectively demonstrate that the SatPaqs and system will function in the real world as modeled and will not cause harmful interference to fixed receivers operating in the C-band. To CenturyLink's understanding there has been no testing of multiple SatPaqs operating in the same area near a point-to-point receiver. CenturyLink appreciates that certain statistical assumptions and propagation modeling assumptions suggest that the likelihood of combinatorial interference is small. But, these assumptions are not sufficient to demonstrate that the SatPaqs will not cause harmful interference to fixed microwave receivers. Given the nature of the traffic carried over these fixed microwave links, including 911 circuits, a more extensive demonstration of the reliability of the SatPaq interference protection system is warranted before a nationwide blanket application for the devices is granted.

The fixed nature of the point-to-point receivers that are authorized to operate in the C-band together with the established interference protection regime enable these point-to-point receivers to operate typically for months and years at a time without an episode of interference. In stark contrast, SatPaqs, because of their mobility, will be an intermittent yet continual threat of interference – a threat of interference that simply has not existed in this band before. The potential interference is avoided through the novel interference protection system proposed by Higher Ground only if the system performs as intended and if the system has been sufficiently designed to accomplish its task. The system should be more fully vetted before it is implemented nationally.

Higher Ground should perform testing to demonstrate the reliability of the interference protection algorithm and scheme and to demonstrate that the system effectively prevents interference when multiple SatPaqs are in use near a fixed microwave receiver. Until these tests are performed and Higher Ground has repeatedly demonstrated that no interference occurs, its SatPac devices should not be permitted to operate nationwide in the 5925-6425 MHz band. Additionally, the application should not be granted unless Higher Ground accepts liability for any harm to CenturyLink, its network, and any users of its network resulting from any interference caused by SatPac devices. If Higher Ground wants to launch a novel interference protection system and new devices in this band, Higher Ground should be willing to accept responsibility for harmful interference not avoided by the system and caused by use of SatPaqs. Further, accepting liability should not be a significant concern for Higher Ground because if the Higher Ground interference protection system is as effective as Higher Ground anticipates, there should be no interference to CenturyLink's fixed receivers and no risk of exposure to liability for harmful interference.

CenturyLink appreciates that the novel interference protection scheme is designed and has been continually refined to avoid interference, and if there is interference that it is likely to be brief. Still, it is impossible to know whether the protection scheme will function as intended and how any interference may impact fixed receivers without further testing. This is especially the case for multiple SatPaqs in an area.

Without further testing, it is not in the public interest for the FCC to waive the categorical exclusion of mobile earth stations and the existing interference protection regime in the C-band to grant this nationwide application.

In light of the meeting with Higher Ground, CenturyLink is making some modifications to the conditions previously requested in its February 1, 2016 ex parte. Still, at a minimum, the following conditions should be met before the Higher Ground application can be further considered:

- Higher Ground must engage in additional testing of the SatPac devices and interference protection scheme. This testing should include the use of multiple SatPac devices within range of a fixed microwave license test facility operating in the 5925-6425 MHz band.

- Licensees in the 5925-6425 MHz band should be notified at least three months prior to any testing or initial launch of SatPaq activity in their area of operations. This is to allow these licensees to plan tests and or monitoring procedures. The area triggering licensee notification should be defined as 125 miles around any radio operating in the 5925-6425 MHz band. Higher Ground must make a reasonable effort to ensure that all licensees were contacted and acknowledged the upcoming operations in the 5925-6425 MHz band. The notifications should include the following information:
  - a detailed description of all planned activities including their type (tests, trials, or roll-out);
  - dates for planned activities;
  - the number of SatPaqs to be used;
  - areas where SatPaqs are to be used; and
  - competent and responsive contact for more questions for clarification or additional information.
- In potential later phases of operations, it may be that the Commission authorizes SatPaq use throughout the United States. Licensees in the 5925-6425 MHz band will still require information to monitor any unwanted interference. Therefore, Higher Ground should be required to do the following:
  - maintain at all times a log of all SatPaq real-time location and activity (including real-time information on transmit power levels such as device power, antenna gain, EIRP, antenna direction, and all available radio parameters);
  - if the database has an outage, immediately cease any transmission of all SatPaqs;
  - provide a written notice describing any change of model or method used in the calculation of interference or restricted areas of use;
  - provide a direct contact for shutdown request in case of harmful interference; and
  - provide a competent and responsive contact to work jointly towards quickly resolving any harmful interference.
- Higher Ground should be liable for any harm to fixed point-to-point communications in this band caused by the use of SatPaqs. This includes liability for any operational hardship – Higher Ground should be liable to reimburse all costs associated with any service degradation or outage, including expenses related to troubleshooting, and expenses associated with restoring service. It also includes liability for any and all fines, penalties, or legal complications resulting from service disruption or outage.

Additionally, any grant of this application should not initially be on a nationwide basis. Any initial grant of this application should be more limited geographically to permit confirmation of the effectiveness of the interference protection scheme prior to implementing it nationwide.

Ms. Marlene H. Dortch

March 4, 2016

Page 4

CenturyLink remains open to working with Higher Ground on these issues. For technical issues the company may contact Thomas Schwengler (720-578-5404 or [thomas.schwengler@centurylink.com](mailto:thomas.schwengler@centurylink.com)). Please contact myself or Melissa Newman (202-429-3120 or [melissa.newman@centurylink.com](mailto:melissa.newman@centurylink.com)) with other questions regarding this matter.

Sincerely,

/s/ Tiffany West Smink

Copy via e-mail:

Stephen Duall (FCC International Bureau, Satellite Division)  
Kerry Murray (FCC International Bureau, Satellite Division)  
Hsing Liu (FCC International Bureau, Satellite Division)  
Chip Fleming (FCC International Bureau, Satellite Division)  
Cindy Spiers (FCC International Bureau, Satellite Division)  
Paul Blais (FCC International Bureau, Satellite Division)  
José Albuquerque (FCC International Bureau, Satellite Division)  
John Schauble (FCC Wireless Telecommunications Bureau, Broadband Division)  
Stephen Buenzow (FCC Wireless Telecommunications Bureau, Broadband Division)  
Blaise Scinto (FCC Wireless Telecommunications Bureau, Broadband Division)  
Adam D. Krinsky, Wilkinson, Barker, Knauer, LLP  
Phuong N. Pham, Wilkinson, Barker, Knauer, LLP  
Susan H. Crandall, Intelsat Corporation  
Laura Stefani, Fletcher, Heald & Hildreth, PLC  
Cheng-yi Liu, Fletcher, Heald & Hildreth, PLC  
Rob Reis, Higher Ground LLC